

NEW SPECIES OF CRASSULACEAE FROM NORTHEASTERN MÉXICO

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ABSTRACT

Villadia jimulcensis Nesom, sp. nov., appears to be a narrow endemic from the Sierra de Jimulco in southwestern Coahuila. It is similar to *V. cucullata* Rose of northeastern México but differs from it in having a more open inflorescence with flowers in axillary clusters, smaller sepals and petals, and petals with a rounded, non-hooded, non-apiculate apex. *Sedum tamaulipense* Nesom, sp. nov., is known from the Sierra de San Carlos in north-central Tamaulipas. It is most similar to *S. reptans* R. Clausen but differs in its smaller leaves, smaller flowers, triangular petals without a subapical apiculus, and transparent carpels connate in their basal $1/2 - 3/5$ and with "cellular" walls.

Recent intensive collecting in the Sierra de San Carlos of north central Tamaulipas has revealed the existence of a distinctive species of yellow-flowered *Sedum*, described below. Another heretofore undescribed species, a *Villadia*, was collected fifteen years ago in the Sierra de Jimulco of southwestern Coahuila and initially misidentified. The plant was broken into several pieces, placed in a large packet, and remained unexamined critically until I began a curatorial study of Mexican Crassulaceae in TEX-LL.

VILLADIA jimulcensis Nesom, sp. nov.

Villadia cucullata Rose simile sed inflorescentia laxa florum in fasciculis remotis axillaribus et petalis parvioribus apice rotundato non cucullato.

Roots fibrous, tuberculate. Stem branched at base, 23 cm tall, 1.5 mm thick, glabrous, streaked with red. Leaves ca 35, distributed evenly on the stem below the inflorescence, sharply ascending, narrowly elliptic-lanceolate, spurred, 12–20 mm long, 2–3 mm wide, greenish, prominently red-dotted. Inflorescence 9 cm long, formed of ca 25 axillary clusters of 1–3 sessile flowers each; floral bracts 4–5 mm long, broadly lanceolate, spurred, dark purple-red. Sepals ovate-lanceolate, free to the base, 2.5–2.8 mm long, shorter than the petals, purple, minutely papillate-tuberculate, particularly along the margins. Corolla tube 0.8–1 mm long; petals dark red to purple-red or orange-red, elliptic-oblong, 3.2–3.8 mm long, keeled, not hooded or only very slightly so, margins white, very narrow, minutely crenulate-erose; nectar glands yellow-

orange, cuneate-truncate, 0.6 mm wide, 0.4 mm high. Carpel body 1.5 mm long; stigmas and styles 0.8 mm long. Mature fruit and seeds not observed.

TYPE: MÉXICO. COAHUILA. Mpio. Torreón, Sierra de Jimulco and up to 3 km N of Mina San José, which is 8 km NE of Estación Otto [ca 60 km SE of Torreón]; 25°6'30"-8'30"N, 103°13'30" W; 1800–3138 m; mat. esp. lat. - chaparral on higher slopes, steep to very steep slopes of limestone in places highly mineralized; with *Acacia berlandieri*, *A. crassibolia*, and *Fouquieria*, with *Quercus* on higher slopes; 27 Sep 1972, F. Chiang, T. Wendt, and M.C. Johnston 9557i (HOLOTYPE: TEX).

Villadia jimulcensis is known only from a single collection from the type locality in Coahuila. It is the fourth species known from the Chihuahuan Desert Region (sensu Henrickson and Straw, 1976), joining *V. cucullata* Rose, *V. squamulosa* (S. Wats.) Rose, and *V. misera* (Lindl.) R. Clausen. The new species is similar to *V. cucullata* of Nuevo León, Coahuila, San Luis Potosí, and Hidalgo in its red-mottled petals with minutely erose margins; *V. cucullata*, however, differs in its much longer sepals, larger, prominently hooded, apiculate petals and densely flowered inflorescence with the rachis barely or not at all visible. Among the other Chihuahuan Desert species *V. jimulcensis* is similar to *V. squamulosa* of south Texas, Coahuila, and Chihuahua in the compact nature of its inflorescence, but the latter has elliptic-obovate sepals and petals with entire margins and an attenuate-acute apex.

SEDUM *tamaulipense* Nesom, sp. nov.

Sedum reptans R. Clausen simile sed foliis et floribus parvioribus, petalis triangularibus sine apiculo subapicali, et carpellis translucidis parietibus cellulosi connatis in 1/2 – 3/5 basali differt.

Prostrate, glabrous herbs with numerous adventitious roots. Stems terete, 0.5–1 mm thick (dry). Leaves 1 per node, spirally arranged, narrowly oblong, 2.5–6 (–7) mm long, 0.8–1.2 mm wide, flattened, divaricate, sessile, prominently spurred, apex rounded-obtuse. Flowers in terminal cymes of 1–3 cincinni; pedicels 1–2 mm long; sepals ovate, 1.2–2.2 mm long, 0.6–0.8 mm wide; petals triangular, bright yellow, 2.5 mm long, 0.8–1 mm wide, filaments 2 mm long. Mature carpels 2.5–4 mm long, basally connate for 1/2–3/5 their length, prominently arcuate-divaricate and adaxially gibbous, walls shiny, transparent, white at fullest maturity, with cellular outlines clearly visible; style persistent, filiform, ca 1 mm long. Seeds brown, minutely papillate, pear-shaped, 0.6–0.7 mm long.

TYPE: MÉXICO. TAMAULIPAS. Mpio. San Carlos, Sierra de San Carlos, ca 5 mi S of San Carlos, N side of Bufa El Diente, just below crest of ridge on N-facing slope; 1200 m; 24°31.5'N, 98°57.6'W; prostrate on tops of large boulders with bryophytes; igneous

bedrock; woods of *Quercus* with abundant *Ostrya*, scattered *Carya* and *Abies*, understory of *Cercis*, *Ungnadia*, *Ptelea*, *Persea*, *Croton*, *Forestiera*, and *Rubiaceae*; 18 Jun 1987, Guy Nesom 6166 with John Norris, Mahinda Martínez, and Lindsay Woodruff (HOLOTYPE: TEX; ISOTYPES: BH, MEXU, UAT [Victoria, Mex.], WTU).

Sedum tamaulipense is closely related to *S. reptans* R. Clausen and will key to that species in Clausen (1984). Both are glabrous, prostrate herbs with adventitious roots, long leaves, and yellow flowers. Both grow in mats on tops of boulders in temperate communities dominated by oaks on the east side of the Sierra Madre Oriental. *Sedum reptans* is known from a system of populations in extreme southern San Luis Potosí and adjacent Querétaro (Clausen, 1978), about 340 kilometers south-southwest of the Sierra de San Carlos in Tamaulipas. I have examined 15 sheets of specimens of *S. reptans*, representing field collections as well as plants cultivated at Cornell, and all are relatively uniform among themselves and discontinuous in morphology from *S. tamaulipense*. The leaves of the new species are 2.5–6 (–7) mm long [vs. 6.5–8.5 mm], the sepals are 1–1.2 mm long [vs. 2.5–3.5 mm], the petals are 2.5 mm long [vs. 6–8 mm] and 0.8–1 mm wide [vs. 1.8–2 mm], and the filaments are 2 mm long [vs. 5 mm]. In addition to these prominent quantitative differences that lend a diminutive appearance to the new species, the carpels of *S. tamaulipense* are basally connate for 1/2–3/5 their length [vs. completely free or connate for only about 1/4 their length], arcuate-divaricate [vs. nearly straight-sided], and the walls are shiny-transparent, white at fullest maturity, with cellular outlines clearly visible [vs. dark, opaque, and without clear cellular outlines]. Further, the petals of *S. tamaulipense* are triangular [vs. lanceolate] and lack the “grooved” midvein and its extension into a prominent apiculus below the petal apex characteristic of *S. reptans*. In its small, yellow flowers with transparent, “cellular” mature carpels, *S. tamaulipense* is similar to *S. nutallianum* Raf. of the United States (Texas, Oklahoma, Arkansas and Missouri), but the latter is an erect annual very different in habit and habitat.

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